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ABSTRACT

A research program identified the key factors that offer insights into students' intrinsic motivation traits. Objectives were to determine intrinsic motivation factors that influence special needs populations during their vocational training programs and their transition into employment and to determine how this information can be used to help them through the transition process. A literature review identified attitudinal, motivational, and affective measures associated with transition efforts and factors associated with successful transition processes. Strategies and a conceptual model were then developed to assess the identified motivation-related factors. The assessment strategies were administered to a sample of special needs learners. Ten vocational instructors and nine support service providers at two technical colleges were questioned about instructional problems and accommodations related to students with low intrinsic motivation; they also reviewed assessment strategies. The program developed a conceptual model of the key aspects of intrinsic motivation factors; a table of specifications that identifies the issues that motivation assessment should address; and surveys and diagnostic interviews. (An attachment is a three-page summary of a national survey of 1,265 professional association members to determine opinions about the relative importance of six concepts related to categories of issues that affect students' motivation traits.) (YLB)

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Intrinsic Motivation Factors to Enhance the Retention of Vocational Special Needs Learners in Postsecondary Vocational Education Programs

Presented at the American Vocational Association Conference
December 1990

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INTRODUCTION

Recent federal attention focused on the transition of students from school to work and to adult lives results primarily from recognition that too many educational practices have not adequately assisted students with special needs learners (and their parent/guardians) to gain access to effective instructional support services and meaningful careers. This "transition initiative" has expanded the roles and responsibilities of vocational educators and special educators in efforts to provide adequate plans and procedures for retention and transition-enhancement efforts for these 'at-risk learners."

OBJECTIVES

This research program at the University of Minnesota was designed to address the problems noted above by focusing on the identification and analysis of relevant functional student characteristics in order to gain new insights into the transition-related problems encountered by "at-risk" learners, consisting primarily of students with mild disabilities and of economically and/or academically disadvantaged students. This research program focused on the following:

1. It identified key factors which offer meaningful insights into students' intrinsic motivation traits. (This research has shown that these traits have a substantial impact on at-risk students' success in training programs.)
2. It identified these key factors within the context of 'real world' vocational training environments.
3. It involved secondary and postsecondary educators in the development, implementation, and evaluation of project procedures, practices, materials, and related policies in terms of their utility within instructional and transition-enhancement programs.
4. It developed strategies designed to enhance equity among targeted student populations by developing and validating a system for enhancing students' access to appropriate training programs and monitoring the effectiveness of those training programs' efforts to accommodate students' unique educational needs.
5. It synthesized and assimilated ideas drawn primarily from research findings and concepts from the broad disciplines of education and the social sciences, i. e., psychology.

Significance of the Problem

Access to the work force and meaningful employment clearly represent critical problems for too many special needs learners. Will (1984) noted that youth with disabilities face uncertain futures when they leave school. For example, between 50 and 80% of the working age adults who report being disabled are jobless (U. S. Commission on Civil Rights, 1983). Will also reported that these costs of joblessness are high (approximately 8% of the GNP) and

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continue to rise (White House Working Group on Disability Policy, 1983). Other at-risk learners, such as minority youth and other persons who are disadvantaged, are encountering similar problems. Although vocational training programs seek to train people to enter the work force, many at-risk learners fail to attain their training and career goals because their unique learning needs are not quickly and meaningfully identified and accommodated. Unfortunately, those assessment efforts that are offered also tend to ignore affective issues such as intrinsic motivation which my research has shown to be almost as important as cognitive and psychomotor factors.

Intrinsic Motivation. For the purposes of this research program, motivation is defined as "A state within individuals which energizes and directs them toward particular goals and which may be viewed as being both intrinsically and extrinsically reinforce." Intrinsic motivation is assumed to represent an incentive that originates within an individual or their behavior itself rather than externally. Motivation appears to be a critical element of cognitive functions. Arbitman-Smith, Haywood, and Branford (1984) cited several studies which support the belief that cognitive development is greatly facilitated by the development of intrinsic motivation systems. Also, as individuals attempt to explore and gain mastery over their environments, they also tend to develop differing degrees of tolerance of novel, complex, and/or difficult experiences (Switzky, Haywood, & Isett, 1974). Observations of persons with mild or moderate special learning needs suggest that they are constantly making choices which establish patterns of decision-making, problem-solving, and choice of responses in social and work settings. Siegel's (1979) review of the literature identified numerous personality dimensions that may be important to concepts and processes that are associated with the goals of this project: failure avoidance (Cromwell, 1963); extrinsic motivation to seek satisfaction in ease, comfort, safety, and security (Haywood, 1964); being outer directed (Turnure & Ziegler, 1964); external locus of control (Cromwell, 1963); and punishment avoiders (McManus & Bell, 1968).

Previous attempts to predict the success or capacity of special needs learners were often directly related only to the development of mental measurements, especially intelligence and social competencies. The intrinsic-related component of this program seeks to combine methods used in the measurement of metacognitive strategies, adaptive behaviors and competencies, as well as affective and motivational incentives, to better understand (and hopefully predict) the real world outcomes of a diverse array of at-risk learners.

METHODS AND PROCEDURES

Given these issues, this research program has focused on the following **intrinsic motivation-related** research questions which focus on the retention of vocational special needs learners in training programs in order to help them improve their transition into a diversified work force:

1. Which intrinsic motivation factors influence special needs populations during their vocational training programs and during their transition into meaningfully employed careers as adults?

2. How can information about these factors be used to assist special needs learners through this transition process?

Since a variety of strategies are required to meet this research program's objectives, this program's plan of operation consisted of three phases. That plan of operation focused on the following program phases:

Year One (1988).

Literature review: Exploration of the research literature identified attitudinal, motivational, and affective measures associated with transition efforts: e.g., persistence (which includes the dropout-related literature), and the attitude, and achievement. During this phase, factors (i.e., attitudes toward work, history of working successfully with other people, life experiences) were identified which are associated with successful transition processes.

Year Two (1989).

Assessment procedures development: Strategies and conceptual model were developed to assess the motivation-related factors identified during Year One efforts. These assessment strategies include self-report and instructor-based efforts that examine students' attitudes about their training programs, personal history, educational history, level of independent functioning, volunteer experiences, and general attitudes towards work and their postsecondary vocational education programs. These ideas and products were reviewed by field-site staff and Advisory Committee members, and revised as necessary/appropriate.

Year Three (1990).

Assessment procedures field-testing: The assessment strategies were administered to a sample of special needs learners. These strategies were evaluated largely on their ability to differentiate between students likely to or unlikely to attain their training goals and to make a successful t ition into the work place. Items were evaluated with various item statistics.

Develop a Conceptual Model of Intrinsic Motivation. The development of conceptual models to guide research program activities was based upon an analysis of Year One literature review results. Those findings were synthesized and organized into logical groups of ideas and approaches to the problem. It was then possible to develop a model that became the basis for identifying key intrinsic motivation issues for postsecondary vocational assessment strategies. These model components and related strategies were analyzed by field-site staff and national consultants to determine the validity and utility of such factors for assessing students' intrinsic motivation levels. (See attached model)

Field-Site Institutions and Staff. Two Technical Colleges (one metropolitan and one out-state) served as field sites for this research program. A total of 10 vocational instructors (who had some special needs learners in their training programs) and 9 support service providers were identified. Participants received an honoraria as compensation for their time and assistance, as well as to maximize the extent of their cooperation and to compensate them for their efforts after normal work hours.

Identify and Analyze Existing Intrinsic Motivation Assessment Efforts. Field-site participants were questioned about instructional problems and accommodations related to students believed to have low intrinsic

motivation, as well as about how informal assessment processes now function. Field-site personnel were also asked to review assessment strategies and procedures developed by this research program so that the feasibility of various potential strategies could be analyzed in terms of their feasibility and utility within the field-site settings.

Develop, Evaluate, and Revise Intrinsic Motivation Assessment Strategies. After assessment strategies were developed, they were examined by field-site staff. Their comments and suggestions were used as the basis for additional revisions and the revised assessment strategy was presented to the Advisory Committee for analysis and comments. The Committee's suggestions were reviewed and implemented, as appropriate. This version of the assessment strategy was then examined by a small group of field-site staff who were not previously involved in its development. Their reactions provided the basis for subsequent changes that were made.

Reporting and Products. A technical report was written to describe the program's findings and recommendations. It focused on: (a) a description of the conceptual model developed, (b) the nature of the field-sites and participating staff, (c) the intrinsic motivation assessment strategies now in place in those sites, (d) a description of the assessment needs that have yet to be properly addressed, and (e) a description of strategies to be implemented for additional validation and reliability studies.

RESULTS

This research program has successfully conceptualized, developed, and field-tested a comprehensive strategy for identifying and assessing at-risk learners in vocational education programs. In addition to the development of a detailed conceptual model of the key aspects of intrinsic motivation factors, a comprehensive table of specifications was created that specifies the issues which motivation assessment efforts should address. This table also identifies who should conduct the assessment efforts, when, and how those efforts should interact with instructional efforts and specialized accommodation efforts for at-risk learners. Surveys and diagnostic interviews have been developed, field-tested, revised, and statistically analyzed. The state Technical College SSystem in which this research program was conducted will soon consider the feasibility of implementing the program's ideas and materials throughout the state. In addition, additional assessment strategies and procedures are being developed for diagnosing and accommodating increasingly more severe cases of at-risk high school students whose risks are associated with their motivation-related characteristics. ***Details of these outcomes are to be discussed in my verbal presenation at the 1990 AVA Conference.***

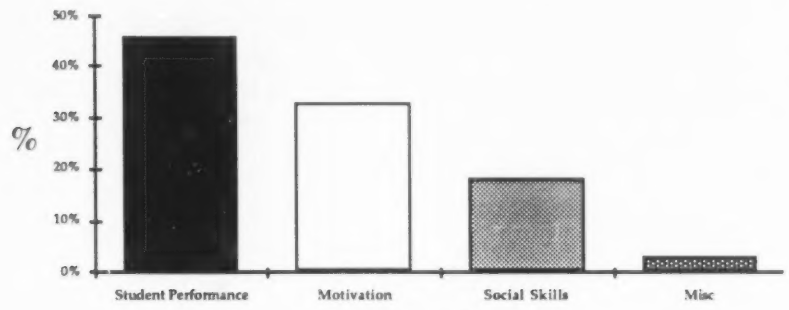
Importance of this Study

The outcomes of this research program promise major improvements in the abilities of institutions throughout the country to identify at-risk learners, before and during their training programs, in ways that will enable those institutions to analyze and correct, compensate, or circumvent motivation problems that have previously gone unidentified and ignored. Since this program's research supports the conclusion that motivation-related issues are as important as academic skills and physiological attributes in determining students' successes in their training programs, this program's outcomes are believed to be extremely important and very unique.

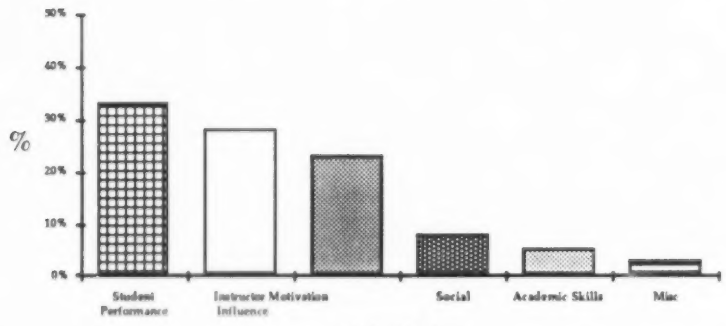
Motivation's Influence on Students' Success in Postsecondary Vocational Programs

The following charts depict the relative importance of motivation in determining the successof of postsecondary vocational students in a four -year study in Minnesota Technical Colleges:

Amount of Variance Accounted for by Instructor Factors



Amount of Variance Accounted for by Student Factors (Using Standardized Data)



Summary of a National Survey of NAVESNP and DCD Members

The following data were produced by a national survey of NAVESNP and DCD members to detemine their opinions about the relative importance of six concepts related to categories of issues which affect students' motivation traits. This survey was designed to determine the Construct Validity and Face Validity of these concepts. The survey data clearly support that belief that the six categories of motivation factors represent important influences on students' performance levels in school programs, thus, establishing these forms of validity.

Random Sample: **1072 NAVESNP Members (50% of total membership)**
961 DCD Members (50% of total membership)

Respondents: **A total of 1265 (62%) questionnaires were returned after three mailings.**
NAVESNP = 632 (59%)
DCD = 633 (66%)

Education Level:

- 776 respondents (63% of those answering the question) indicated they have completed a **Masters Degree**.
- 254 respondents (20.6%) have completed a **Bachelors Degree**.
- 167 respondents (13.6%) have completed a **Doctors Degree**.
- Only 34 respondents (2.8%) indicated that they had **no college degree** (10 of these were presently college students pursuing Bachelors Degrees).

Distribution by Job Title:	**N**	**Percent**
Special Education Teacher	210	16.7%
Administrator	191	15.2%
Vocational Work Exp. Coord.	125	10.0%
Special Ed. Teacher Educator	102	8.1%
Vocational Education Teacher	89	7.1%
Special Needs Counselor	86	6.9%
Vocational Evaluator	50	4.0%
Counselor	42	3.3%
Voc. Ed. Teacher Educator	42	3.3%
College Student	27	2.2%
Researcher	19	1.5%
Other Title	272	21.7%

Years of employment experience in Vocational Education Programs:
Mean average number of years employed in vocational education programs equals 7.8 years (SD=6.812; N=1090).
Median average (score at middle of distribution) equals 6.0 years of employment in vocational educational programs.

Years of employment experience in Special Education Programs:
Mean average number of years employed in special education programs equals 11.0 years (SD=7.222; N=1187).
Median average (score at middle of distribution) equals 11.0 years of employment in special educational programs.

SURVEY QUESTIONS

Ratings of agreement/disagreement on whether the following factors have a substantial influence on students' success in school:

Scale for all ratings: DVS=1 DS=2 D=3 A=4 AS=5 AVS=6

1. **Environmental factors**: Mean=5.1; SD=.832; N=1243

   501 respondents (40.3% of those answering the question) reported that they **Strongly Agree**.

   457 respondents (36.8%) reported **Agreeing Very Strongly**.

   260 respondents (20.9%) reported **Agreeing**.

   Less than 2% of respondents expressed any form of disagreement on this factor.

2. **Students' interactions with their educational programs**: Mean=4.9; SD=.775; N=1238

   565 respondents (45.6% of those answering the question) reported that they **Strongly Agree**.

   347 respondents (28.0%) reported **Agreeing**.

   310 respondents (25.0%) reported **Agreeing Very Strongly**.

   Less than 2% of respondents expressed any form of disagreement on this factor.

3. **Students' personalities**: Mean=4.6; SD=.837; N=1241

   499 respondents (40.2% of those answering the question) reported **Agreeing**.

   476 respondents (38.4%) reported **Agreeing Strongly**.

   197 respondents (15.9%) reported **Agreeing Very Strongly**.

   Less than 6.0% of respondents reported any form of disagreement on this factor.

4. **Students' academic abilities**: Mean=**4.3**; SD=.968; N=1246
   568 respondents (45.6% of those answering the question) indicated **Agreeing**.

   350 respondents (28.1%) reported **Agreeing Strongly**.

   151 respondents (12.1%) reported **Disagreeing**.

   133 respondents (10.7%) reported **Agreeing Very Strongly**.

   3.5% of respondents reported **Disagreeing Strongly** or **Disagreeing Very Strongly**.

5. **Students' interpersonal skills**: Mean=**4.8**; SD=.812; N=1243
   525 respondents (42.2% of those answering the question) reported **Strongly Agreeing**.

   413 respondents (33.2%) reported **Agreeing**.

   269 respondents (21.6%) reported **Agreeing Very Strongly**.

   Less than 3% of respondents reported any form of disagreement with this factor.

6. **Students' locus of control**: Mean=**5.0**; SD=.880; N=1241
   487 respondents (39.2% of those answering the question) reported **Strongly Agreeing**.

   435 respondents (35.1%) reported **Agreeing Very Strongly**.

   270 respondents (21.8%) reported **Agreeing**.

   Less than 4% of respondents reported any form of disagreement on this factor.

Significant Findings (Determined by use of ANOVA):

1. Respondents with Doctorates (mean=4.45) indicated significantly more agreement than did those with Bachelors degrees (mean=4.17) on the factor **"Students' academic abilities have a substantial influence on students' success"** (p=.0197).

2. Respondents with Doctorates (mean=4.77) indicated significantly more agreement than those with Bachelors degrees (mean=4.47) or Masters degrees (mean=4.54) on the factor **"Students' monitoring of their interactions of their environments and of their progress toward attaining their goals have a substantial influence on students' success"** (p=.0197).

3. Respondents who indicated their title was "Other" (mean=5.05) indicated significantly more agreement than did Vocational Evaluators (mean=4.64) on the factor **"Students' interactions with their educational programs"** (p=.0126).

4. Respondents who indicated their title was Administrator (mean=5.17), Special Education Teacher (mean=5.11) or "Other" (mean=5.06) indicated significantly more agreement than did Vocational Education Teachers (mean=4.69) on the factor **"Students' locus of control"** (p=.0034).

5. Respondents who indicated their title was Special Education Teacher Educator (mean=4.68), Special Education Teacher (mean=4.63), or Administrator (mean=4.62) indicated significantly more agreement than did Vocational Education Teachers (mean=4.21) on the factor **"Students' monitoring of their interactions of their environments and of their progress toward attaining their goals have a substantial influence on students' success"** (p=.0264).

6. Respondents who indicated their current employer was College or University (mean=4.78) indicated significantly more agreement than did those persons who indicated their employer as Local Education Agency on the factor **"Students' monitoring of their interactions of their environments and of their progress toward attaining their goals have a substantial influence on students' success"** (p=.0724).